

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A range sensing system comprising:

at least one energy source adapted to emit energy capable of reflection by one or more targets within a region, and

at least one receiver having a plurality of sensing elements ~~adapted~~ configured to sense the reflection of emitted energy from ~~said at least one~~ a plurality of targets within said region, and

an activation system associated with said at least one energy source, said activation system being adapted to activate and deactivate an energy source in a cyclic pattern with a selected source frequency, and

a shielding system associated with said at least one receiver, said shielding system being ~~adapted~~ configured to block the sensing of reflected energy from ~~[[a]]~~ the plurality of targets by ~~said at least one~~ [[a]] receiver, said shielding system being activated and deactivated in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequencies being selected from different frequency values, and

wherein ~~an output signal of~~ each sensing element of said at least one receiver generates an output signal with a frequency substantially equal to the frequency difference between said receiver frequency and said source frequency, and said output signal is compared with a reference signal to determine a range value for ~~a selected~~ each of the sensing elements of target ~~of the~~ said at least one receiver, where phase differences between ~~the receiver~~ said output signal

and the said reference signal indicate a range value, and wherein the system indicates from the range values of the sensing elements a range value for each target of the plurality of targets sensed by the at least one receiver, substantially at the same time.

2. Cancelled.
3. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the source frequency used is phase locked with respect to the receiver frequency used.
4. (Previously Presented) A range sensing system as claimed in Claim 1 wherein a single signal generator generates a receiver frequency which is phase locked with respect to a source frequency generated by the same signal generator.
5. Cancelled.
6. (Previously Presented) A range sensing system as claimed in Claim 1 wherein said at least one energy source is activated and said at least one receiver is shielded using a plurality of paired source and receiver frequencies.
7. (Currently Amended) A range sensing system as claimed in Claim 6 wherein said at least one [[a]] receiver is adapted to emit a plurality of output signals in response to the use of said plurality of paired sets of source and received frequencies.
8. (Previously Presented) A range sensing system as claimed in Claim 1 which includes a single energy source only with a diffuse emission pattern.
9. (Previously Presented) A range sensing system as claimed in Claim 1 wherein an energy source is formed from a light emitting diode.

10. (Previously Presented) A range sensing system as claimed in Claim 1 wherein an energy source emits visible light energy.

11. (Currently Amended) A range sensing system as claimed in Claim 10 wherein a sensing element of the receiver is formed from a light sensitive transducer.

12. (Currently Amended) A range sensing system as claimed in Claim 11 wherein the receiver is formed from or implemented by a charged coupled device.

13. (Currently Amended) A range sensing system as claimed in Claim 1 wherein the range sensing system includes a single receiver having the plurality of sensing elements only.

14. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the activation system controls the supply of power to an energy source.

15. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the shielding system is implemented through a physical barrier.

16. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the shielding system is implemented through an enable signal applied to operate a receiver.

17. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the reference signal is generated by mixing the receiver frequency and the source frequency.

18. (Previously Presented) A range sensing system as claimed in Claim 1 wherein the reference signal is generated through a calibration procedure.

19. (Currently Amended) A range sensing system as claimed in Claim 1 wherein the range sensing system includes a processing means adapted to compare an output signal of the said at least one receiver to a reference signal.

20. (Original) A range sensing system as claimed in claim 19 wherein the processing means is a computer system.

21. (Currently Amended) A method of calculating [[a]] range values for a plurality of
~~to a targets~~ within a region substantially at the same time, comprising:

(i) activating an energy source using an activation system, said energy source being activated and deactivated in a cyclic pattern with a selected source frequency, and

5 (ii) operating a receiver having a plurality of sensing elements configured to sense the reflection of emitted energy from at least one of said plurality of targets within said region, using a shielding system, said shielding system being adapted configured to block the sensing of reflected energy from [[a]] said plurality of targets in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequency being selected from different frequency
10 values, and

(iii) ~~comparing a receiver an~~ output signal of each sensing element of said at least one receiver having a frequency substantially equal to the frequency difference between said receiver frequency and said source frequency with a reference signal to determine a range value for each sensing element of said at least one receiver ~~said target~~, where phase differences between the
15 ~~receiver~~ said output signal and said reference signal indicate a range value,

(iv) determining from the range values of the sensing elements a range value for each target of the plurality of targets sensed by the receiver, substantially at the same time.

22. (Original) A method of calculating a range to a target within a region as claimed in claim 21 wherein the energy source is activated and the receiver is shielded using a plurality of paired source and receiver frequencies.

23. Cancelled.

24. Cancelled.